

This listing of the claims replaces all prior versions, and listings of claims in the application:

LISTING OF THE CLAIMS

1. (currently amended) A method for managing more devices on a computer network communications system than permitted by a maximum limit for a number of network addresses defined by a networking protocol of said computer network communications system comprising:

providing a network communications medium for carrying communications between devices of said computer network communications system such that said network communications medium operates in accordance with said networking protocol of said computer network communications system;

providing a network architecture having a maximum number of network addresses corresponding to said maximum limit for said number of network addresses for said networking protocol of said computer network communications system;

providing a plurality of active devices that equals ~~said a~~ said maximum number of devices, said maximum number of devices corresponding to said maximum number of network addresses;

connecting said plurality of active devices to said network communications medium;

setting an individual address value of each of said plurality of active devices to an unallocated network address;

providing at least one spare device such that said at least one spare device plus said plurality of active devices results in a total number of system devices that exceeds said maximum number of network addresses, said at least one spare device having a network address value, ~~and~~ said at least one network spare device determining an unallocated network address that is not used by another device connected to said network communications medium, and said at least one spare device using said unallocated network address as said network address value for said at least one spare device after at least one of said plurality of active devices is

disconnected from said network communications medium and said at least one spare device is connected to said network communications medium;

operating said computer network communications system with said plurality of active devices;

determining that at least one of said plurality of active devices has failed and has become at least one failed device;

disconnecting said at least one failed device from said network communications medium, said at least one failed device having a first address;

connecting said at least one spare device to said network communications medium;

determining said first address as unallocated by said at least one spare device;

setting said network address value of said at least one spare device to said first address by said at least one spare device; and

operating said computer network communications system with said at least one spare device in place of said at least one failed device.

2. (previously presented) The method of claim 1 wherein said process of setting said individual address value of each of said plurality of active devices to an unallocated network address further comprises assigning a predetermined address for at least one of said plurality of active devices.

3. (previously presented) The method of claim 1 further comprising:

providing a plurality of switches such that each switch of said plurality of switches connects and disconnects a device to and from said network communications medium;

attaching each switch of said plurality of switches to each of said plurality of active devices and to said at least one spare device; and

connecting each switch of said plurality of switches to a controller that controls said plurality of switches.

4. (previously presented) The method of claim 3 wherein said process of determining that at least one of said plurality of active devices has failed and has become at least one failed device is performed by said controller.
5. (previously presented) The method of claim 4 wherein said plurality of active devices and said at least one spare device comprise a plurality of data storage devices.
6. (previously presented) The method of claim 5 wherein said plurality of active devices are arranged as at least a portion of a RAID system.
7. (previously presented) A computer network communications system that includes more devices in said computer network communications system than permitted by a maximum limit for a number of network addresses defined by a networking protocol of said computer network communications system comprising:
 - a network communications medium that carries communications between devices of said computer network communications system such that said network communications medium operates in accordance with said networking protocol of said computer network communications system;
 - a network architecture that has a maximum number of network addresses corresponding to said maximum limit for said number of network addresses for said networking protocol of said computer network communications system;
 - a plurality of active devices connected to said network communications medium that equals said maximum number of addresses;
 - at least one spare device included in said computer network communications system such that said at least one spare device plus said plurality of active devices results in a total number of system devices that exceeds said maximum number of network addresses, said at least one spare device having a network address value, and said at least one network device determining an unallocated network address that is not used by another device connected to said network communications medium and said at least one spare device using said unallocated network address as said network address value for said at least one spare device after at least one of said plurality of

active devices is disconnected from said network communications medium and said at least one spare device is connected to said network communications medium;

a plurality of switches attached to each of said plurality of active devices and to said at least one spare device that connects and disconnects each of said plurality of active devices and said at least one spare device to and from said network communications medium; and

a controller that controls each of said plurality of switches such that switches attached to each of said plurality of active devices are connected to said network communications medium until such time said controller causes an unwanted active device to be disconnected from said network communications medium by turning off at least one of said switches attached to each of said plurality of active devices and said controller then causing said at least one spare device to be connected to said network communications medium by turning on a switch of said plurality of switches attached to said at least one spare device.

8. (previously presented) The computer network communications system of claim 7 wherein said controller further:

assesses a status of each of said plurality of active devices;

determines that one of said plurality of active devices is improperly functioning as a failed device;

causes a first switch of said plurality of switches to disconnect said failed device from said network communications medium; and

causes a second switch of said plurality of switches to connect said at least one spare device to said network communications medium.

9. (previously presented) The computer network communications system of claim 8 wherein said controller further resets said computer network communications system.

10. (previously presented) The computer network communications system of claim 8 wherein at least two of said plurality of active devices are storage devices.

11. (previously presented) The computer network communications system of claim 10 wherein said storage devices are arranged as a RAID system.

12. (currently amended) A computer network communications system that includes more devices in said computer network communications system than permitted by a maximum limit for a number of network addresses defined by a networking protocol of said computer network communications system comprising:

means for providing a network communications medium for carrying communications between devices of said computer network communications system such that said network communications medium operates in accordance with said networking protocol of said computer network communications system;

means for providing a network architecture having a maximum number of network addresses corresponding to said maximum limit for said number of network addresses for said networking protocol of said computer network communications system;

means for providing a plurality of active devices that equals ~~said a~~ maximum number of devices, said maximum number of devices corresponding to said maximum number of network addresses;

means for connecting said plurality of active devices to said network communications medium;

means for setting an individual address value of each of said plurality of active devices to an unallocated network address;

means for providing at least one spare device such that said at least one spare device plus said plurality of active devices results in a total number of system devices that exceeds said maximum number of network addresses, said at least one spare device having a network address value;

means for operating said computer network communications system with said plurality of active devices;

means for determining that at least one of said plurality of active devices has failed and has become at least one failed device;

means for disconnecting said at least one failed device from said network communications medium, said at least one failed device having a first address;

means for connecting said at least one spare device to said network communications medium;

means for determining said first address as unallocated by said at least one spare device;

means for setting said network address value of said at least one spare device to said first address by said at least one spare device; and

means for operating said computer network communications system with said at least one spare device in place of said at least one failed device.

13. (previously presented) The computer network communications system of claim 12 wherein at least two of said plurality of active devices are storage devices.

14. (previously presented) The computer network communications system of claim 13 wherein a plurality subset of said plurality of active devices are arranged as a RAID system.